REMARKS

Claims 1-31 are pending in this application. By this Amendment, the specification and claims 1-2, 8-9, 16 and 19-20 are amended and new claims 28-31 are added. Various amendments are made for clarity, and are unrelated to issues of patentability.

The Office Action objects to the disclosure and claims because of informalities. The Office Action also rejects claims 8, 9 and 16 under 35 U.S.C. §112, second paragraph. It is respectfully submitted that the above amendments to the specification and claims obviate the grounds for objection and rejection. Withdrawal of the objections and rejection is respectfully requested.

The Office Action rejects claims 1-4, 6, 8-11, 13-17, 19-23, 26 and 27 under 35 U.S.C. §102(b) by U.S. Patent 5,794,014 to Shetty et al. (hereafter Shetty). The Office Action also rejects claims 5, 12 and 24 under 35 U.S.C. §103(a) over Shetty in view of U.S. Patent 5,802,328 to Yoshimura. Additionally, the Office Action rejects claims 7, 18 and 25 under 35 U.S.C. §103(a) over Shetty in view of U.S. Patent 4,764,868 to Ketelhut et al. (hereafter Ketelhut). The rejections are respectfully traversed.

Independent claim 1 recites an apparatus for automatic router configuration. More specifically, independent claim 1 recites a connector, a multi-protocol transceiver, a CPU and a programmable logic device (PLD) coupled to sense a change in a connection state of the connector and to transfer information regarding the sensed change to the CPU. Furthermore, the CPU has a serial communication control function coupled to the multi-protocol transceiver

15

to process data received from or for transmission to a communication network according to a communication environment of a connection network.

In stark contrast, Shetty relates to a desktop computer having slots or sockets 116 into which peripheral cards 122 may be inserted. Shetty's desktop computer is not a router. For example, paragraph [5] of the present specification discusses one example of operations of a router. Shetty's desktop computer does not perform these features and/or other features of a router, and accordingly cannot be considered a router. Shetty's computer system does not include the claimed configurations as recited in independent claim 1 (and similarly recited in independent claim 20). Independent claims 8 and 16 recite specific features relating to a router. See also dependent claims 18 and 19. Shetty's desktop computer system does not suggest the specifically claimed features regarding a router. The outstanding rejection of each of these claims should be withdrawn at least for this reason.

The Office Action appears to reference Shetty's socket controller 22A as corresponding to the claimed multi-protocol transceiver and Shetty's CPU 140 as corresponding to the claimed CPU. See Shetty's Fig. 2. The Office Action also asserts that Shetty's interface card 202 and cable 110 correspond to the claimed programmable logic device. However, these assertions are incorrect.

More specifically, independent claim 1 recites the CPU having a serial communication control function coupled to the multi-protocol transceiver to process data received from or for transmission to a communication network according to a communication environment of

connection network. However, Shetty's CPU 140 does not have a serial communication control function coupled to a multi-protocol transceiver. Rather, Shetty's CPU 140 is coupled to a core logic 143, which in turn, is coupled to system bus 146. Shetty has no disclosure regarding the CPU 140 having a serial communication control function coupled to the socket controller 220A as is apparently alleged in the Office Action. Furthermore, Shetty's CPU 140 does not process data received from or for transmission to a communications network according to a communication environment of a connection network. Furthermore, Shetty's interface card 202 and cable 110 do not sense a change in a connection state of the connector and transfer information regarding the sensed change to the CPU as recited in independent claim 1. Accordingly, independent claim 1 defines patentable subject matter.

Independent claim 20 defines patentable subject matter for at least similar reasons. That is, independent claim 20 recites a connector, a multi-protocol processor and a CPU having a serial communication control function coupled to the multi-protocol processor to process data received from or for transmission to a communication network according to a communication environment of a connection network. For at least similar reasons as set forth above, Shetty does not teach or suggest the CPU having a serial communication control function coupled to the multi-protocol processor to process data received from or for transmission to a communication network according to a communication environment of a connection network as recited in independent claim 20. Accordingly, independent claim 20 defines patentable subject matter.

17

Each of independent claims 8 and 16 also define patentable subject matter. For example, independent claim 8 recites sensing a change in a connection state of a connector between a router and a data circuit terminating equipment (DTE), transferring sensing information to an internal CPU when a change in the connection state of the connector is sensed, and initializing parts of the router and normalizing communication environments based on the sensing information. In addressing independent claim 8, the Office Action appears to assert that Shetty's system or desktop 101 could perform routing functions. However, there is no suggestion for this feature. Rather, it appears that the Office Action is asserting that the desktop inherently is a router. However, inherency may not be established by mere probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient to show inherency. See Continental Can v. Monsanto Corp., 20 USPQ 2d, 1746 (Fed. Cir. 1991). Shetty has no suggestion for sensing a change in a connection state of a connector between a router and a data circuit terminating equipment as recited in independent claim 8. Furthermore, Shetty has no suggestion for initializing parts of the router. Shetty clearly relates to a desktop computer and does not relate to a router. Accordingly, independent claim 8 defines patentable subject matter.

Furthermore, independent claim 16 recites specific features. More specifically, independent claim 16 recites sensing a connection and disconnection state of a connector configured to connect to a data circuit terminating equipment (DCE) by a programmable logic device (PLD), determining a hardware protocol when a change in the state of the connector is

18

sensed, <u>sending an interrupt request signal to a CPU</u> to inform the CPU of the change in the

state of the connector, <u>sending a response</u> to the interrupt request signal <u>from the CPU to the</u>

<u>PLD</u> to request the PLD to send a hardware protocol mode value to the CPU, <u>transmitting the</u>

<u>hardware protocol mode value from the PLD to the CPU</u>, and <u>initializing parts of the router</u> and

normalizing a communication environment based on information <u>transmitted to the CPU</u>.

Shetty has no teaching or suggestion for sending an interrupt request signal to a CPU to

inform the CPU of a change in the state of the connector. Furthermore, Shetty has no teaching

or suggestion for transmitting the hardware protocol mode value from the PLD to the CPU.

The Office Action appears to reference Shetty's col. 6, lines 20-23 and col. 17, lines 50-52 for

these features. However, these sections do not relate to features regarding information sent to

the CPU or information transmitted from a PLD to a CPU. Rather, Shetty discloses that each

socket controller 220A includes a status detection logic circuit. The status detection logic circuit

detects changes in an interrupt request signal IRQ for a socket controller. The IRQ signal is

generated by a peripheral coupled to a controller (i.e., controller 220A). The detected changes of

the IRQ signal are reported to the system adapter 204 <u>during a service read</u>. See col. 18, lines 1-

44; and col. 20, lines 1-21. There is no suggestion for sending an interrupt request signal to a

CPU. Additionally, there is no suggestion for sending a response (to the interrupt request signal)

from the CPU to the PLD. Rather, Shetty's interrupt request signal is provided by a peripheral

coupled to a controller. Still further, for similar reasons as discussed above, there is no

suggestion for initializing parts of the router and normalizing a communication environment

based on the sensed information transmitted to the router. Accordingly, independent claim 16

defines patentable subject matter at least for these reasons.

For at least the reasons set forth above, each of independent claims 1, 8, 16 and 20 define

patentable subject matter. Claims 2-7 and 29 depend from claim 1, claims 9-15 depend from

claim 8, claims 17-19 depend from claim 16 and claims 21-28 depend from claim 20 and

therefore define patentable subject matter at least for this reason. In addition, the dependent

claims also recite features that further and independently distinguish over the applied references.

For example, dependent claim 3 recites the IRQ signal line, the ACK signal line, and the

CS signal line are coupled between the PLD and the CPU, and wherein the protocol mode line

and the cable state sensing line are coupled between the PLD and the connector. Furthermore,

dependent claim 4 recites the IRQ signal line and the ACK signal line comprise a control line to

carry information to the CPU indicating a change in the connection state of the connector,

wherein the state is one of connection and disconnection. In addressing these features of

dependent claims 3 and 4, the Office Action appears to state that Shetty discloses an IRQ signal

line, an ACK signal line and a CS signal line as the system bus 146. However, the referenced

section of col. 5, line 65-col. 6, line 7 does not disclose an IRQ signal line and an ACK signal

line and a CS signal line coupled between a PLD and a CPU. See also dependent claim 26. As

discussed above, Shetty clearly discloses an IRQ signal is generated by a peripheral coupled to a

controller 220. This signal is not sent to the CPU 140. Thus, dependent claims 3 and 26 define

patentable subject matter at least for this reason.

20

Furthermore, with respect to claim 4, the Office Action appears to state that Shetty's system bus 146 carries information to the CPU indicating a change in the connection state of the connector. However, the system bus 146 does not include an IRQ signal line and the ACK signal line comprising a control line to carry information to the CPU indicating a change in the connection state. That is, as stated above, the IRQ signal is sent to a controller 220A. Thus, dependent claim 4 defines patentable subject matter at least for this reason.

Furthermore, dependent claims 5 and 12 recite a pull-up resistor to sense a connection and disconnection state of the connector. The Office Action references Yoshimura's col. 2, lines 61-62 as providing a pull-up resistor to detect a state of connection or disconnection. However, there is no suggestion of how this pull-up resistor may be combined with Shetty, and more specifically with Shetty's controller 220A. Furthermore, the Office Action states that it would have been obvious to combine the two references for the benefit of detector simplicity to obtain the inventions as specified in claims 5-12. Clearly, this is impermissible hindsight as the Office Action explicitly states that the motivation is provided by the present application. The rejection should be withdrawn at least for this reason.

Dependent claims 6 and 13 also recite that the PLD uses a pull-up resistor to determine a hardware protocol. The Office Action references Shetty's col. 13, lines 51-54 for these features. However, this section does not suggest a PLD that uses a pull-up resistor to determine a hardware protocol. While Shetty may disclose a pull-up resistor, the disclosed resister does not

determine a hardware protocol. Thus, dependent claims 6 and 13 define patentable subject

matter at least for this reason.

Furthermore, dependent claim 14 recites transmitting an interrupt request (IRQ) signal to

the CPU when the change in the connection state of the connector is sensed, sending an

acknowledgment signal from the CPU and requesting that a hardware protocol mode value be

transmitted to the CPU, and transmitting a protocol connection mode value to the CPU. For at

least similar reasons as set forth above, Shetty does not teach or suggest these features as Shetty

does not teach or suggest the respective transmitting and sending to/from the CPU. Thus,

dependent claim 14 defines patentable subject matter at least for this reason.

Still further, dependent claim 22 recites a programmable logic device (PLD) coupled to

receive connection state and hardware protocol information from the connector and transmit an

interrupt request (IRQ) signal to the CPU in accordance with the state and protocol information.

For at least similar reasons as set forth above, Shetty does not teach or suggest the claimed PLD

or transmitting an IRQ signal to the CPU. Thus, dependent claim 22 defines patentable subject

matter at least for this reason.

Still further, dependent claims 28 and 29 recite the PLD is coupled to pins or holes of the

connector. Shetty clearly does not show that a PLD is coupled to pins or holes of the connector.

Rather, the only connection with the card 122 appears to be the socket controller 220A. Thus,

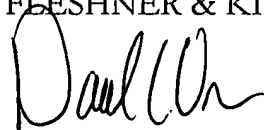there is no suggestion of how the interface card 202 or cable 110 may be coupled to pins or

holes of the card 122. Thus, claims 28 and 29 define patentable subject matter at least for this

additional reason.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition

for allowance. Favorable consideration and prompt allowance of claims 1-31 are earnestly

solicited. If the Examiner believes that any additional changes would place the application in

better condition for allowance, the Examiner is invited to contact the undersigned attorney,

David C. Oren, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is

hereby made. Please charge any shortage in fees due in connection with the filing of this,

concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and

please credit any excess fees to such deposit account.

Respectfully submitted,
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